

The Rejection Under 35 U.S.C. §103(a) Based on Koehler

In Paper No. 11, the Examiner maintains the rejection of claim 3 under 35 U.S.C. §103(a), as being unpatentable over U.S. Patent No. 5,672,781 of Koehler, *et al.*, (hereinafter referred to as "Koehler"), and makes the rejection final. The Examiner contends that Koehler teaches a mixture of fatty alcohols having an iodine number in the range from 20 to 110, and having from 8 to 22 carbon atom aliphatic chains which may be saturated or unsaturated, and linear or branched. The Examiner contends that Koehler teaches that it is possible to obtain such fatty alcohols from a palm oil fatty methyl ester and that the iodine value of the fatty alcohols may be adjusted via fractionation prior to hydrogenation. The Examiner argues that the only differences between the teachings of Koehler and Applicants' claimed invention are the range of carbon chain length and the iodine value range of the products. The Examiner argues that it would have been obvious to one of ordinary skill in the art to obtain fatty alcohols in accordance with the claimed invention based on the process taught by Koehler. The Examiner has also responded that Applicants' arguments thus far have been directed to the inventive process, not the product-by-process claim which stands rejected.

Applicants strenuously, but respectfully, traverse the Examiner's rejection and the arguments and contentions set forth in support thereof, for the following reasons.

As the Examiner has pointed out in Paper No. 11, the patentability of a product-by-process claim is based upon the product itself, even though the claim is defined by the process claimed therein. The Examiner continues by arguing that where the product-by-process is the same as, or obvious from, a product of the prior art, the claim is unpatentable. Ultimately, it remains well-settled that where the product of a process is new and unobvious based on the prior art, the product is nonetheless patentable.

Applicants respectfully submit that the product, as claimed in pending claim 3, is both novel and unobvious in view of Koehler. Applicants further submit that while the arguments in support of the previous assertion may be based upon the new and allowable process set forth in claim 4, the distinctions provided by the process are directed to the product itself.

Applicants' claimed invention is directed to a mixture of fatty alcohols prepared by a process comprising two steps. First, palm oil fatty acid methyl esters are fractionated to

produce a methyl ester fraction substantially comprised of C₁₆ methyl esters and a bottom fraction of predominantly unsaturated C₁₆-C₁₈ methyl esters. Second, the bottom fraction is hydrogenated to produce the corresponding predominantly C₁₆-C₁₈ unsaturated alcohols. The product of the process exhibits an alkyl chain profile and an iodine number not provided by the process disclosed in Koehler. As discussed further below, the process disclosed in the Koehler reference requires various, different means by which to obtain a product even close to that which is claimed. Koehler requires either a different starting material, further distillations, additional fractionations, or any combination thereof, simply to provide for the elevated iodine numbers in accordance with the claimed invention. However, because the claimed product is prepared by a process involving the fractionation of palm oil, followed by hydrogenation, the product provided is different than a product which has been subjected to multiple fractionations, distillations, or quite obviously, a product based on a different starting material.

Koehler does not teach or suggest a fractionation prior to hydrogenation wherein saturated species and unsaturated species are separated. In Example 1, Koehler teaches that a C_{12/18} palm kernel (*i.e.*, nut) oil methyl ester, which is already the product of a first fractionation, is further fractionated to a C_{12/14} and a C_{16/18} methyl ester fraction. The C_{16/18} fraction is then hydrogenated to produce the alcohols, and subsequently distilled, or further fractionated, to remove a head fraction, thus increasing the unsaturated content. (*See*, Koehler, col. 3, lines 39-35 and Example 1, col. 4, lines 38-41). The resulting product obtained via the process taught by Koehler has an iodine value of 61.3. (*See*, Koehler, col. 4, line 58). Only through further distillation, (*see*, Example 2), is the iodine value raised to about 75. Example 3 of Koehler avoids a second substantial distillation by altering the starting materials to include rapeseed oil, as opposed to simply using palm oil derived species.

Each fractionation prior to hydrogenation, or subsequent distillation can potentially increase or decrease the content of any one or more particular fatty alcohols present in the product.

Koehler fails to teach or suggest the simplified process according to the claimed invention, whereby a fraction of methyl esters obtained from palm oil fatty acid is first separated

into saturated and unsaturated fractions prior to hydrogenation. The claimed invention affords a product having a higher iodine value.

There is no teaching or suggestion contained in the Koehler reference which would motivate one of ordinary skill in the art to modify its teachings as suggested by the Examiner in order to arrive at the claimed invention. Koehler specifically discusses the increase of the product's iodine value via subsequent distillation, and makes no mention of separation prior to hydrogenation. One would be required to deviate from the express teachings of Koehler to arrive at the claimed invention. Moreover, given that Koehler fails to teach or suggest the steps of the claimed process, and given that Koehler contains no teaching or suggestion to make such a modification, it cannot be said that one of ordinary skill in the art would reasonably expect to succeed in such a deviation from the teachings of Koehler.

Accordingly, Applicants submit that the Examiner has failed to establish a *prima facie* case of obviousness, as none of the three criteria necessary to establish a *prima facie* case of obviousness has been satisfied. Thus, Applicants respectfully request withdrawal of the rejection under 35 U.S.C. §103(a), based upon the Koehler reference.

In view of the remarks set forth above, Applicants submit that all pending claims patentably distinguish over the prior art of record and known to Applicants, either alone or in combination. Accordingly, reconsideration, withdrawal of the rejections and a Notice of Allowance for all pending claims are respectfully requested.

Respectfully submitted,

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